Syllabus and Other Information
GEOL 102-01 HISTORICAL GEOLOGY FALL, 2008
9:00 – 9:50 A.M. Monday, Wednesday, Friday
Hanna Hall 322

Instructor: Dr. Mervin Kontrovitz
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Office Hours: 8:00 A.M. on Monday and Friday; 10:00 A.M. on Wednesday. Other times by appointment.

Emergency action: **In the event that it becomes necessary to evacuate Hanna Hall, please use the nearest exit and assemble in the quad area. Please do not re-enter the building until safety officials announce that it is safe to do so.**

Prerequisite: None

Textbook: Harold L. Levin, 2006. *The Earth Through Time*, 8th Ed., John Wiley & Sons, Inc. ISBN 978-0-471-69743-5

Class Meetings: 9:00 A.M., MWF; Hanna Hall 322

Course Description: Three credits. The origins and evolution of the solid earth, oceans, atmosphere, and biosphere. Major geological and biological events will be considered in the context of the vastness of geologic time.

Course Goals: To provide the students with the opportunity to understand and appreciate the materials and processes that shaped the earth over time. To appreciate the modern unifying explanations of a complex earth history, including the concept of plate tectonics.

Attendance: Students are expected to attend all class meetings. Attendance will be taken and excess absences will be reported to the student's academic dean as required by University regulations. Please read and understand "CLASS ATTENDANCE REGULATIONS" as presented on page 61of the ULM *Undergraduate Catalog 2007-2008.* All excuses presented to the instructor will be verified for authenticity.

Methods of Instruction: Lectures, classroom discussions, and the study of pertinent illustrations and geological specimens.

Course Evaluation: There will be three written hourly examinations and a written final examination. None of the examinations will be comprehensive. The exams will each consist of true-false questions, multiple-choice questions, matching, definitions, identifications and short essay questions.

Each of the four written examinations will be worth up to 100 points for a possible total of 400 points. Final letter grades for the course will be assessed in accordance with the following ranges: A = 90-100%; B = 80-89.9%; C = 70- 79.9%; D = 60- 69.9%; F = <60%.

Examination Dates: September 12, October 6, November 6; this is a tentative schedule for the three hourly exams and any change in the schedule will be announced in advance. **Final Exam** on Thursday, December 4, 1:00 – 2:50 P.M. as scheduled by the University. **Only validated excuses will be accepted to allow the student to take a make-up examination. Any make-up examination that is allowed will not be the same as the one administered during the regularly scheduled time.**

A mid-term grade will be submitted for each student based on the scheduled examinations taken prior to that date. The mid-term grade is not a guarantee of the final course grade, but is provided only for your information about your standing at the middle of the semester.

The final date for dropping this course or resigning from the University is October 22, 2008; a "W" grade will be issued.

Academic Integrity: Students must observe the ULM published policy on Academic Dishonesty in the ULM (*Student Policy Manual* -- http://www.ulm.edu/studentpolicy/).

Course Outline: The schedule is tentative and may be changed at the professor's discretion.

	Topic	Reading

Week 1 **The Science of Historical Geology** **Chapter 1**
Scientific method, deep time, very old earth; plate tectonics, organic evolution

Week 2 **Early Geologists and fundamental principles** **Chapter 2**
Fossils, Steno and his principles, Neptunists vs. Plutonists and related people, Uniformitarianism, Catastrophism, Actualism, unconformities, cross-cutting relationships, Louis Agassiz and glaciers, Sir James Hall, James Hall of New York, Cope and Marsh.

Week 3 **Time and Geology** **Chapter 3**
Relative time and methods, Geologic Time Scale, Sedgwick and Murchison, radioactivity and geologic time, age of the earth.

Week 4 **Earth Materials and their use in historical geology** **Chapter 4**
Rock forming minerals (silicates, non-silicates); Rocks (igneous, sedimentary, metamorphic); rocks and interpretations of geologic history.

Week 5 **Sediments and sedimentary rocks** **Chapter 5**
The special importance of sediments and sedimentary rocks in the history of geology and in geologic history; clastics and non-clastics relationships to tectonics; uses in interpretation of paleoenvironments. Relationships of rock units, time rock units, time "units."

Week 6 **The fossil record and life on earth** **Chapter 6**
Fossils, origins and preservation; species concepts; Darwin and others; populations; use of fossils in correlation, paleogeography, paleoenvironmental studies and organic evolution.

Week 7 **Plate tectonics as a unifying concept** **Chapter 7**
The earth's interior and supporting evidence; structures (faults, folds); plate tectonics and supporting evidence, both physical and biological; driving mechanisms; plate boundaries and interiors;

Week 8 Earliest geologic: Hadian and Archean Eons Chapter 8
Earth in space; evidence for interpretations; shields and cratons; meaning and use of Precambrian;" Earliest rocks; origins of life on earth; Archean life forms.

Week 9 The Proterozoic Eon Chapter 9
Vastness of time; history and supporting evidence; rocks types and distribution; provinces; climate and climate changes; life forms.

Week 10 Early in the Paleozoic Era Chapter 10
Paleogeography and its evidence; mountain building (orogenies); base of the Cambrian; cratons; epicontinetal seas; climates.

Week 11 Later in the Paleozoic Era Chapter 11
Supercontinent and it components; North America; cyclothems and coal; Appalachian and Ouachita mountain building; Cordilleran belt; paleogeography; Europe;

Week 12 Paleozoic life Chapter 12
Development of animals with shells; some strange and extinct early forms; metazoans; various groups (phyla); plants; vertebrates; invasion of land; mass extinctions.

Week 13 Mesozoic events Chapter 13
Breakup of the supercontinent; opening of oceans; three periods of the Mesozoic Era; thick limestones; epicontinental seas; paleogeography; Rocky Mountains; Tethys seaway.

Week 14 Mesozoic life Chapter 14
Mesozoic climates; diverse invertebrates (major phyla); plankton; land invertebrates; land vertebrates including dinosaurs, flying reptiles, birds; plants; mass extinctions and impact theory; other possible causes of extinctions.

Week 15 Cenozoic Chapters 15, 16
Modern changes to the time scale for the Cenozoic Era; continued sea-floor spreading; mountain ranges; physiographic provinces of North America; continental glaciation; life forms.